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ABSTRACTS

Policy Research Working Paper Series

Numbers 2568–2618

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Policy Research Working Paper Series

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2568. Ownership Structure and the Temptation to Loot: Evidence from Privatized Firms in the Czech Republic

Robert Cull, Jana Matesova, and Mary Shirley
(March 2001)

Evidence from the Czech Republic shows that financial incentives and regulation are as important as ownership structure in the design of privatization.

Using a new data set on privatized firms in the Czech Republic, Cull, Matesova, and Shirley examine how the design of privatization affects outcomes.

Earlier studies of privatization in the Czech Republic focused largely on how the broad distribution of shares through vouchers may have motivated the new owners to strip assets from privatized firms.

The authors find evidence for static asset stripping, but also for what Akerlof and Romer (1993) call looting—borrowing heavily with no intent to repay and using the loans for private purposes. This looting occurred because the larger privatized companies had privileged access to credit from state-controlled banks, which had little incentive to enforce debt contracts.

The policy implications are significant: financial incentives and regulation are as important as ownership structure in the design of privatization.

This paper—a product of Regulation and Competition Policy, Development Research Group—is part of a larger effort in the group to understand the role of financial reform in economic development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Zeny Kranzer, room MC3-300, telephone 202-473-8526, fax 202-522-1155, email address zkranzer @worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at rcull@worldbank.org, jmatesova@worldbank.org, or mshirley @worldbank.org. (39 pages)

2569. From Users to Custodians: Changing Relations between People and the State in Forest Management in Tanzania

Liz Alden Wily and Peter A. Dewees
(March 2001)

In the face of scarce public resources and burgeoning demand from the growing population for agricultural land and woodland products, Tanzania has increasingly recognized the need to bring individuals, local groups, and communities into the policy, planning, and management process if woodlands are to remain productive in the coming decades.

Central control of forests takes management responsibility away from the communities most dependent on them, inevitably resulting in tensions. Like many African countries, Tanzania—which has forest or woodland cover over 30–40 percent of its land—established central forestry institutions at a time when there was little need for active management and protection because population pressures were low. But in the face of scarce public resources and burgeoning demand from the growing population for agricultural land and woodland products, there has been growing recognition of the need to bring individuals, local groups, and communities into the policy, planning, and management process if woodlands are to remain productive in the coming decades.

Tanzania established its first three community-owned and -managed forest reserves in September 1994. Today, supported by substantive policy reforms that largely grew out of the early experiences with community-based management, more than 500 villages own and manage forest reserves, and another 500 or so smaller social units and individuals have recognized reserves. Joint management by the state and the people is getting under way in at least four government-owned forest reserves.

Wily and Dewees describe the evolution of community-based forest and woodland management in Tanzania and the underlying policy, legal, and institutional framework. They draw together some of the lessons from this experience and review emerging issues.

They find that the most successful initiatives involving communities and individuals have been those that moved away from a user-centric approach (like that often used in South Asia) and toward an approach based on the idea that communities can be most effective when they are fully involved in all aspects of decision-making about management and protection. This suggests that the government should allow communities to become engaged as managers in their own right, rather than as passive participants who merely agree to the management parameters defined by the government.

The Tanzanian experience has shown that community-based forest and woodland management can be an integral part of initiatives that seek to improve governance over natural resources by improving accountability and by democratizing decisionmaking at the local level.

This paper—a product of the Environment and Social Development Unit, Africa Technical Families—is part of a larger effort in the region to disseminate research findings of operational relevance. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Marie Claire Li Tin Yue, mail stop J6-604, telephone 202-473-4102, fax 202-614-1102, email address mlitinyue @worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at lizwily@net2000ke. com or pdewees@worldbank.org. (31 pages)

2570. Asymmetries in Union Relative Wage Effects in Ghanaian Manufacturing : An Analysis Applying Quantile Regressions

Niels-Hugo Blunch and Dorte Verner
(March 2001)

Evidence from Ghanaian manufacturing confirms that unions have an asymmetrical effect on wages: they benefit mainly the lower end of the wage distribution. The evidence also confirms the presence of structural differences between union and nonunion segments: workers in the union sector of manufacturing earn more than workers in the nonunion sector.

Blunch and Verner analyze the determinants of earnings in Ghanaian manufacturing, focusing on the impact of unions in terms of the "union relative wage effect" and the possible asymmetries of this effect across the earnings distribution.

They find evidence of a union relative wage effect occurring through two distinct channels. First, there is a direct effect through individual union membership, the standard "union premium" well known from the empirical literature on unions. Second, there is a spillover effect to nonunion members. The authors also find evidence of an additional union effect that comes through firm-specific training.

They confirm their conjecture that there is an asymmetry in the union relative wage effect: unions benefit mainly at the lower end of the wage distribution. This finding is in line with earlier research, which generally finds that unions reduce income inequality and wage discrimination.

An evaluation of the nonunion subsample using the estimated union wage structure confirms the presence of structural differences between the union and non-union segments of Ghanaian manufacturing: for given characteristics, a worker in the union sector earns more than a worker in the nonunion sector.

This paper—a joint product of Human Development 3, Africa Technical Families, and the Economic Policy Sector Unit, Latin America and the Caribbean Region—is part of a larger effort in the Bank to understand the links between education, training, earnings, and institutional arrangements. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Melvina Clarke, room G8-118, telephone 202-473-1752, fax 202-522-3252, email address mclarke@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at nblunch@worldbank.org ordverner@worldbank.org. (34 pages)

2571. Stock Market Responses to Bank Restructuring Policies during the East Asian Crisis

Daniela Klingebiel, Randy Kroszner, Luc Laeven, and Pieter van Oijen
(March 2001)

During a crisis of confidence, announcements of deposit guarantees may give market participants short-term comfort. But stock market responses show that using public funds for bank bailouts is not a credible way to restore the health of the financial sector.

The East Asian crisis began in Thailand in mid-1997 when an ailing financial sector, a slowdown in exports, and large increases in central bank credit to weak financial institutions triggered a run on the baht. Then the crisis spread to other countries in the region as common vulnerabilities and revaluations of risk in emerging markets triggered large capital outflows.

To better understand the impact of different policy responses to financial crises, Klingebiel, Kroszner, Laeven, and van Oijen investigate how stock markets in East Asian countries reacted to the initial policy announcements of bank and financial restructuring—especially how banking and nonfinancial sectors in Indonesia, the Republic of Korea, Malaysia, and Thailand fared in response to announcements of different restructuring measures.

They find that prices of bank stocks responded positively to announcements about government guarantees of bank liabilities. Nonfinancial companies gained in value when guarantees were announced, but their stock prices were negatively affected by announcements favoring public recapitalization schemes and generous liquidity support programs.

Possibly the market was concerned that public funds per se would not restore the health of the financial sector—that they would not be sufficient or would not be used to restructure bank balance sheets and operations and allow banks to engage in meaningful corporate restructuring. The announcements of increased public support may have been viewed as a signal that the financial institutions were in a financially weaker position than previously thought.

This paper—a product of the Financial Sector Strategy and Policy Department—is part of a larger effort in the department to better understand the costs and benefits of different measures for resolving financial crises. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Rose Vo, room MC9-624, telephone 202-473-3722, fax 202-522-2031, email address hvo1@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at dklingebiel@worldbank.org or llaeven@worldbank.org. (44 pages)

2572. Nonfarm Income, Inequality, and Poverty in Rural Egypt and Jordan

Richard H. Adams, Jr.
(March 2001)

Nonfarm income has a greater impact on poverty and inequality in Egypt than in Jordan. In rural Egypt the poor receive almost 60 percent of their income from nonfarm sources, while in rural Jordan they receive less than 20 percent. The reason for this difference is land: in rural Egypt, agricultural land is very productive, but access is quite limited, and so the poor are "pushed" into nonfarm work; while in rural Jordan, land is not very productive, and access is not highly prized. In both countries the best way to reduce poverty and inequality might be to focus on nonfarm unskilled labor.

The rural economy of developing countries has long been regarded as synonymous with agriculture but in recent years this view has begun to change. Such diverse activities as government, commerce, and services are now seen as providing most income in rural households. Applying decomposition analysis to two new nationally representative sets of household data from Egypt and Jordan, Adams examines how different sources of income—including nonfarm income—affect inequality in rural income. He concludes:

- Nonfarm income has different impacts on poverty and inequality in the two countries. In Egypt the poor (those in the lowest quintile) receive almost 60 percent of their per capita income from nonfarm income. In Jordan the poor receive less than 20 percent of their income from nonfarm income. So nonfarm income decreases inequality in Egypt and increases it in Jordan.
- Access to land accounts for this difference between the two countries. In Egypt the cultivated land base is totally irrigated and very highly productive. Egypt's large rural population seeks access to land but because the land-to-people ratio is so unfavorable, only a minority of rural inhabitants actually own land. The rest—especially the poor—are forced to seek work in the nonfarm sector. By contrast, only 30 percent of Jordan's cultivated land base is irrigated and crop yields are low. So Jordan's rural population does not press for access to land because the attractive economic rates of return are

found in the nonfarm sector. Unlike Egypt's rich, rural Jordan's rich earn less than 10 percent of their total per capita income from agriculture and more than 55 percent of it from nonfarm sources.

- The poor in both countries depend heavily on government employment to decrease inequality. Government wages provide 43 percent of nonfarm income for Egypt's rural poor and 60 percent of Jordan's. But since both governments already employ far more workers than they can possibly use, advocating increased government employment to reduce inequality would not be wise policy advice. From a policy standpoint, it would be better to reduce income inequality by focusing on nonfarm unskilled labor (for example, in construction, brick-making, and ditch-digging), an important income source.
- In Egypt nonfarm income decreases inequality because inadequate access to land "pushes" poorer households out of agriculture and into the nonfarm sector. Although agricultural income is positively associated with land ownership in rural Egypt, that ownership is unevenly distributed in favor of the rich, so nonfarm income is not linked to land ownership and is thus more important to the rural poor.

This paper—a product of the Poverty Division, Poverty Reduction and Economic Management Network—is part of a larger effort in the network to identify the sources of poverty and income inequality in the developing world. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Nelly Obias, room MC4-620, telephone 202-473-1986, fax 202-522-3283, email address nobias @worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The author may be contacted at radams@worldbank.org. (41 pages)

2573. The Gender Implications of Public Sector Downsizing: The Reform Program of Vietnam

Martín Rama
(March 2001)

Men and women may be affected differently by the transition from central planning to a market economy and especially by the privatization and restructuring of state-owned enterprises. In Vietnam during the massive downsizing in the early 1990s, many more women than men were laid off. But in the downsizing in the early part of this decade women are less likely than men to be retrenched in large numbers.

Men and women may be affected differently by the transition from central planning to a market economy and especially by the privatization and restructuring of state-owned enterprises. After briefly reviewing the international evidence on this issue, Rama looks at the recent experience of Vietnam and the prospects of its new reform program.

During the massive downsizing in Vietnam in the early 1990s, many more women than men were laid off. Women withdrew from the labor force in larger numbers than men after separation, but the difference nearly vanished after a year. Economic reforms were associated with a considerable decline in the gender gap in earnings, both in the state sector and outside it.

Women are less likely to be retrenched in large numbers in the downsizing in the early part of this decade. Labor redundancies are concentrated in male-dominated sectors, such as mining, transport, and construction; redundancies are smaller in female-dominated sectors, such as footwear, textiles, and garments. Moreover, temporary and short-term contracts are more prevalent in female-dominated sectors, suggesting demand for women's work.

Assistance programs for redundant workers have potential gender biases. Rama shows that separation packages defined as a multiple of earnings favor men more, while lump-sum packages favor women more. Packages based on seniority are roughly gender neutral, but require a substantially higher expenditure to reach the same acceptance rate as the other two.

This paper—a product of Public Service Delivery, Development Research Group—is part of a larger effort in the group to address social protection issues in the context of economic reforms. The study was supported by the Vietnam Country Office, East Asia and Pacific Region, and by the Bank's Research Support Budget under the research project "Efficient Public Sector Downsizing" (RPO 683-67). Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Hedy Sladovich, room MC 2-204, telephone 202-473-7698, fax 202-522-1154, email address hsladovich@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at mrama @worldbank.org. (37 pages)

2574. How Adverse Selection Affects the Health Insurance Market

Paolo Belli
(March 2001)

There may be a price to pay (in terms of inefficient coverage) if competition among health insurers is encouraged as a way to give patients greater choice and to achieve better control over insurance providers.

Adverse selection can be defined as strategic behavior by the more informed partner in a contract against the interest of the less informed partner(s). In the health insurance field, this manifests itself through healthy people choosing managed care and less healthy people choosing more generous plans.

Drawing on theoretical literature on the problem of adverse selection in the health insurance market, Belli synthesizes concepts developed piecemeal over more than 20 years, using two examples and revisiting the classical contributions of Rothschild and Stiglitz. He highlights key insights, especially from the literature on "equilibrium refinements" and on the theory of "second best."

The government can correct spontaneous market dynamics in the health insurance market by directly subsidizing insurance or through regulation; the two forms of intervention provide different results. Providing partial public insurance, even supplemented by the possibility of opting out, can lead to second-best equilibria. The same result holds as long as the government can subsidize contracts with higher-than-average premium-benefit ratios and can tax contracts with lower-than-average premium-benefit ratios. Belli analyzes the following policy options relating to the public provision of insurance:

- Full public insurance.
- Partial public insurance with or without the possibility of acquiring supplemen-

tary insurance and with or without the possibility of opting out.

In recent plans implemented in Germany and the Netherlands, where competition among several health funds and insurance companies was promoted, a public fund was created to discourage risk screening practices by providing the necessary compensation across risk groups. But only "objective" risk adjusters (such as age, gender, and region) were used to decide which contracts to subsidize. Those criteria alone cannot correct the effects of adverse selection.

Regulation can exacerbate the problem of adverse selection and lead to chronic market instability, so certain steps must be taken to prevent risk screening and preserve competition for the market.

Belli considers the following three policy options for regulating the private insurance market:

- A standard contract with full coverage.
- Imposition of a minimum insurance requirement.
- Imposition of premium rate restrictions.

This paper—a product of Public Economics, Development Research Group—is part of a larger effort in the group to improve social service delivery in developing countries. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Hedy Sladovich, room MC2-609, telephone 202-473-7698, fax 202-522-1154, email address hsladovich@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at pbelli@hsph.harvard.edu or pbelli1@worldbank.org. (31 pages)

2575. The Quality of Bureaucracy and Capital Account Policies

Chong-En Bai and Shang-Jin Wei
(March 2001)

The more corrupt a country, the more likely it is to impose capital controls. As a country improves its public institutions over time, it tends to gradually liberalize its capital accounts. Removing capital controls prematurely could reduce rather than improve the country's economic efficiency.

The extent of bureaucracy varies extensively across countries, but the quality of bureaucracy within a country changes more slowly than economic policies. Bai and Wei propose that the quality of bureaucracy may be an important structural determinant of open economy macroeconomic policies—especially the imposition or removal of capital controls.

In their model, capital controls are an instrument of financial repression. They entail efficiency loss for the economy but also generate implicit revenue for the government. The results show that bureaucratic corruption translates into the government's reduced ability to collect tax revenues. Even if capital controls and financial repression are otherwise inefficient, the government still has to rely on them to raise revenues to provide public goods.

Among the countries for which the authors could get relevant data, they find that the more corrupt ones are indeed more likely to impose capital controls, a pattern consistent with the model's prediction. To deal with possible reverse causality, they use the extent of corruption in a country's judicial system, and the degree of democracy, as the instrumental variables for bureaucratic corruption. The instrumental variable regressions show the same result: more corrupt countries are associated with more severe capital controls.

The results suggest that as countries develop and improve their public institutions, reducing bureaucratic corruption over time, they will choose to gradually liberalize their capital accounts. Removing capital controls prematurely when forced by outside institutions to do so could reduce rather than improve their economic efficiency.

This paper—a product of the Development Research Group—is part of a larger effort in the group to understand the consequences of corruption and public governance. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Hedy Sladovich, room MC2-609, telephone 202-473-7698, fax 202-522-1154, email address hsladovich@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at baic@hku.hk or swei@worldbank.org. (34 pages)

2576. Trade Policy, Standards, and Development in Central America

Gary Clyde Hufbauer, Barbara Kotschwar, and John S. Wilson
(March 2001)

Faster economic growth and expansion of exports in Central America in the 21st century will depend on many factors. These include efficient and modern standards systems and an end to technical barriers to trade. Regional efforts can be an efficient way to modernize standards systems.

After reviewing the current state of standards and trade in Central America, Hufbauer, Kotschwar, and Wilson suggest top priorities for reform from a trade policy perspective in a new and increasingly important area of public policy and development. They conclude that it makes sense to:

- Take a regional rather than a national approach to setting up accreditation, testing, and metrology infrastructure—to share equipment, experts, and information to get more bang out of limited funding.
- Promote regional bodies as venues for Central American countries to develop common positions in international discussions of the development of standards.
- Regionalize information-gathering efforts and use information technology to disseminate that information rapidly.
- Push for a sunset clause in international standards development, because standards have value only if adopted and used.

This paper—a product of Trade, Development Research Group—is part of a larger effort in the group to build capacity and explore links between trade, development, and standards. Copies of the paper are available free from the World Bank, 1818 H Street, NW, Washington, DC 20433. Please contact Lili Tabada, mail stop MC3-303, telephone 202-473-6896, fax 202-522-1159, email address ltabada@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at ghufbauer@iie.com, bkotschwar@oas.org, or jswilson@worldbank.org. (48 pages)

2577. Developing Rainfall-Based Index Insurance in Morocco

Jerry Skees, Stephanie Gober, Panos Varangis, Rodney Lester, and Vijay Kalavakonda
(April 2001)

Almost 90 percent of Moroccan agriculture is not irrigated, and since most of Morocco's crops depend on adequate rainfall, yields and production vary widely. A drought insurance program based on rainfall index contracts is feasible in parts of Morocco and could significantly benefit its farmers.

Cereal production accounts for about 70 percent of all agricultural land in Morocco. Cereal producer prices, influenced by the government, are higher than world prices. Production is divided into six broad agroclimatic zones. About half of cereal production is concentrated in the favorable and intermediate zones; the rest occurs mostly in less favorable (arid and semi-arid) zones, with average annual rainfall below 450 millimeters.

Skees and colleagues assess the feasibility of rainfall-based index insurance to provide effective, low-cost drought insurance for Moroccan farmers and rural dwellers. Their analysis focuses on Morocco's three main cereal crops—hard wheat, soft wheat, and barley—using data on annual production and planting from 1978–99. Maize is included in some of the analysis.

The benefits of this program over the traditional insurance scheme are that it minimizes the risk of moral hazard and adverse selection and promotes a streamlined payout process. These features make the program more attractive to international re-insurers and investors in capital markets.

A rainfall-indexed insurance product is feasible in Morocco, where the statistical correlation between rainfall and cereal revenues is rather strong in 17 provinces in the more favorable agroclimatic zones. Proportional rainfall insurance contracts would pay the insured an amount based on the shortfall in actual rainfall during a set period compared with the trigger rainfall. The contracts could be purchased in any amount, allowing farmers to insure the full amount of their expected revenue if they wish.

This paper—a joint product of Private Sector Development and Finance Group, Middle East and North Africa Region; Rural Development, Development Research Group; and Financial Sector Department—is part of a larger effort in the Bank to analyze the feasibility of weather-based index insurance markets in developing countries. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Pauline Kokila, room MC3-510, telephone 202-473-3716, fax 202-522-1151, email address pkokila@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at sgober@worldbank.org, pvarangis@worldbank.org, rlester@worldbank.org, or vkalavakonda@worldbank.org. (37 pages)

2578. How Accession to the European Union Has Affected External Trade and Foreign Direct Investment in Central European Economies

Bartlomiej Kaminski
(April 2001)

During the Central European countries' reintegration into the world economy, their proximity and accession to the European Union greatly affected first the flow of capital and then the flow of goods. Countries that adopted radical liberal reform and had preferential access to EU markets have benefited most, attracting foreign direct investment and drawing multinational corporations relocating their production sites.

The collapse of central planning set in motion the reintegration of the Central European countries into the world economy. The European Union, because of its proximity, economic weight, and policy-induced deep integration, has shaped these countries' politics and economics. The process of accession to the EU—which began with the signing of the European Association Agreements in 1991—has influenced their economic institutions, policies, and performance.

Kaminski traces the emerging architecture of commercial relations in Europe and argues that the accession process had its greatest impact first on capital flows and later on goods flows.

The countries that have benefited most from accession are those that followed the path of radical liberal reform. Radical liberal reform, combined with preferential access to EU markets, attracted foreign direct investment.

The European Union provided an outlet initially for Central European countries' unskilled-labor-intensive products and more recently for skilled-labor-intensive and technology-based products.

Knowledge-intensive imports from the European Union have also contributed to industrial realignment in the Central European countries. The prospect of accession and, since 1998, unfettered access to EU markets for industrial products has given a boost to multinationals relocating production in these countries.

An earlier version of this paper—a product of Trade, Development Research Group—was presented at the "Prague 2000 Accession" session at the annual meetings of the International Monetary Fund and World Bank in Prague in September 2000. Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, email address ltabada@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at bkaminski@worldbank.org. (43 pages)

2579. Public Health and Education Spending in Ghana in 1992–98: Issues of Equity and Efficiency

Sudharshan Canagarajah and Xiao Ye
(April 2001)

In an economy facing fiscal constraints, public spending in the social sectors needs to be linked to outcomes to ensure efficient and equitable delivery of services.

Using primary data from the health and education ministries and household survey data from the Ghana Statistical Service, Canagarajah and Ye analyze equity and efficiency issues in public spending on health and education in Ghana in the 1990s.

Public expenditures in the education sector declined in the second half of the 1990s. Basic education enrollment has been stagnant or declining in public schools but increasing in private schools, resulting in a moderate increase in total enrollment. Regional disparities are significant, with lower public resource allocations and lower enrollment ratios in the three poorest regions. The quality of basic education in public schools remains poor, while it has steadily improved in private schools. Enrollments in higher levels are lagging behind those in basic education.

Ghana ranks high among West African countries in health indicators, although its health expenditures tend to favor the nonpoor. While more of the rural population have gained access to health services in recent years, many still have limited access or none. Moreover, there is no link between the pattern of public expenditures—especially the pattern of immunization across Ghana—and health outcomes.

To ensure that social services are efficiently and equitably delivered in a fiscally constrained economy, Canagarajah and Ye argue, public expenditures need to be linked to outcomes.

This paper—a joint product of the Ghana Country Department, Country Director Groups, and Macroeconomics 1, Africa Technical Families—is part of a larger effort in the region to undertake and disseminate analytical work on issues related to poverty reduction strategies. Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Melvina Clarke, room G8-118, telephone 202-473-1752, fax 202-522-3252, email address mclarke@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at scanagarajah@worldbank.org or xye@worldbank.org. (46 pages)

2580. On "Indirect" Trade-Related Research and Development Spillovers

Olivier Lumenga-Neso, Marcelo Olarreaga, and Maurice Schiff
(April 2001)

Trade does matter for the international transmission of knowledge. And the indirect trade-related transmission of knowledge is at least as important as its direct transmission.

An influential literature argues that trade promotes the flow of knowledge and the transmission of technology between trading partners. This literature tends to focus on "direct" spillovers related to the levels of research and development (R&D) *produced* by the trading partners.

Lumenga-Neso, Olarreaga, and Schiff argue that "indirect" trade-related R&D spillovers also take place between countries even if they do not trade with each other. These indirect spillovers are associated with *available* (rather than produced) levels of R&D. If Country A imports from Country B and Country B imports from Country C, C could transmit knowledge to Country A even if A does not trade directly with Country C.

The authors' empirical results suggest that these indirect trade-related spillovers are at least as important as the direct spillovers and may be more so. The results strengthen the view that trade matters in the international transmission of R&D.

The results also suggest that the existence of these indirect effects reduces the importance of bilateral trade patterns as determinants of the level of foreign R&D spillovers through trade.

This paper—a product of Trade, Development Research Group—is part of a larger effort in the group to understand the relationship between openness and growth. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, email address ltabada@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at lumenganeso@hec.unige.ch, molarreaga@worldbank.org, or mschiff@worldbank.org. (23 pages)

2581. Securities Clearance and Settlement Systems: A Guide to Best Practices

Mario Guadamillas and Robert Keppler
(April 2001)

How to assess securities clearance and settlement systems, based on international standards and best practices.

As an essential part of a nation's financial sector infrastructure, securities clearance and settlement systems must be closely integrated with national payment systems so that safety, soundness, certainty, and efficiency can be achieved at a cost acceptable to all participants. Central banks have paid considerable attention to payment systems, but securities clearance and settlement systems have only recently been subjected to rigorous assessment.

The Western Hemisphere Payments and Securities Clearance and Settlement Initiative (WHI), led by the World Bank and in cooperation with the Centro de Estudios Monetarios Latinoamericanos (CEMLA), gave Guadamillas and Keppler a unique opportunity to observe how various countries in Latin America and the Caribbean undertake securities clearance and settlement. To do so, Guadamillas and Keppler developed a practical and implementable assessment methodology covering key issues that affect the quality of such systems.

In this paper they discuss the objectives, scope, and content of a typical securities system, identify the elements that influence the system's quality, and show how their assessment methodology works. They focus on the development of core principles and minimum standards for integrated systems of payments and securities clearance and settlement.

Their paper fills a gap by providing an evaluation tool for assessors of such systems, especially those who must assess evolving systems in developing and transition economies. Essentially, an assessment involves a structured analysis to answer four related questions:

- What are the objective and scope of a securities clearance and settlement system?
- Who are the participants, what roles do they play, and what expectations do they have?
- What procedures are required to satisfy the participants' needs?
- What inherent risks are involved, and how can they be mitigated at an acceptable cost?

This paper—a product of the Finance Cluster, Latin America and the Caribbean Region, and Financial Sector Infrastructure, Financial Sector Development Department—is part of a larger effort in the Bank to assess payment systems and securities clearance and settlement systems in Latin America and the Caribbean. Copies of the paper are available free from the World Bank, 1818 H Street, NW, Washington, DC 20433. Please contact Helena Issa, room I5-110, telephone 202-473-0154, fax 202-522-2106, email address hissa@worldbank.org. Policy Research

Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at mguadamillas@worldbank.org or rkeppler@worldbank.org. (34 pages)

2582. Development Financing during a Crisis: Securitization of Future Receivables

Suhas Ketkar and Dilip Ratha
(April 2001)

Market placements backed by future receivables can allow public and private sector entities in a developing country to escape the sovereign credit ceiling and raise lower-cost financing from international capital markets. If planned and executed ahead of time, such transactions can sustain external financing even during a crisis.

Mexico's Telmex undertook the first future-flow securitization transaction in 1987. From then through 1999, the principal credit rating agencies rated more than 200 transactions totaling $47.3 billion. Studying several sources, Ketkar and Ratha draw conclusions about the rationale for using this asset class, the size of its unrealized potential, and the main constraints on its growth.

Typically the borrowing entity (the originator) sells its future product (receivable) directly or indirectly to an offshore special purpose vehicle (SPV), which issues the debt instrument. Designated international customers make their payments for the exports directly to an offshore collection account managed by a trustee. The collection agent makes principal and interest payments to investors and pays the rest to the originator. This transaction structure allows many investment-grade borrowers in developing countries to pierce the sovereign credit ceiling and get longer-term financing at significantly lower interest costs. The investment-grade rating attracts a wider group of investors. And establishing a credit history for the borrower makes it easier for it to access capital markets later, at lower costs.

This asset class is attractive for investors—especially buy-and-hold investors, such as insurance companies—because of its good credit rating and stellar performance in good and bad times. Defaults in this asset class are rare, despite frequent liquidity crises in developing countries.

Latin American issuers (Argentina, Brazil, Mexico, and Venezuela) dominate this market. Nearly half the dollar amounts raised are backed by receivables on oil and gas. Recent transactions have involved receivables on credit cards, telephones, workers' remittances, taxes, and exports.

The potential for securing future receivables is several times the current level ($10 billion annually). The greatest potential lies outside Latin America, in Eastern Europe and Central Asia (fuel and mineral exports), the Middle East (oil), and South Asia (remittances, credit card vouchers, and telephone receivables).

One constraint on growth is the paucity of good collateral in developing countries. Crude oil may be better collateral than refined petroleum. Agricultural commodities are harder to securitize.

Another constraint: the dearth of high-quality issuers in developing countries. Securitization deals are complex, with high preparation costs and long lead times. The ideal candidates are investment-grade entities (in terms of local currency) in sub-investment-grade countries (in terms of foreign currency).

Establishing indigenous rating agencies can slash out-of-pocket costs. Developing standardized templates for certain types of securitizations might help. A master trust arrangement can reduce constraints on size. Multilateral institutions might consider providing seed money and technical assistance for contingent private credit facilities.

This paper—a product of the Economic Policy and Prospects Group—is part of a larger effort in the group to monitor capital flows to developing countries. The study was funded by the Bank's Research Support Budget under the research project "Innovative Mechanisms for Raising Development Finance—Future-Flow Securitization." Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Sarah Crow, room MC2-358, telephone 202-473-0763, fax 202-522-3277, email address scrow@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Dilip Ratha may be contacted at dratha@worldbank.org. (33 pages)

2583. How the Location of Roads and Protected Areas Affects Deforestation in North Thailand

Maureen Cropper, Jyotsna Puri, and Charles Griffiths
(April 2001)

Establishing protected areas (national parks together with wildlife sanctuaries) in North Thailand did not reduce the likelihood of forest clearing, but wildlife sanctuaries may have reduced the probability of deforestation. Where new roads are located affects how much of a threat they are to protected areas.

Using plot-level data, Cropper, Puri, and Griffiths estimate a bivariate probit model to explain land clearing and the siting of protected areas in North Thailand in 1986.

Their model suggests that protected areas (national parks together with wildlife sanctuaries) did not reduce the likelihood of forest clearing, but wildlife sanctuaries may have reduced the probability of deforestation.

Road building, by reducing the impedance-weighted distance to market, has promoted clearing, especially near the forest fringe.

The authors simulate the impact of further road building to show where road building is likely to have the greatest impact on forest clearing and where it is likely to threaten protected areas.

This paper—a product of Infrastructure and Environment, Development Research Group—is part of a larger effort in the group to examine factors affecting deforestation in developing countries. The study was funded by the Bank's Research Support Budget under the research project "Spatial Models of Environmental Processes: A Study of Deforestation in Thailand" (RPO 683-17). Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Viktor Soukhanov, mail stop MC2-205, telephone 202-473-5721, fax 202-522-3230, email address vsoukhanov @worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at mcropper @worldbank.org, jpuri@worldbank.org, or griffiths.charles@epa.gov. (38 pages)

2584. Structural Adjustment and Forest Resources: The Impact of World Bank Operations

Kiran D. Pandey and David Wheeler
(April 2001)

Structural adjustment has not promoted domestic deforestation, but it has increased net imports of wood products, implying some displacement of pressure onto other countries' forest resources. Devaluations have significantly increased the exploitation of forest resources.

Over two decades, the World Bank has undertaken many structural adjustment operations with governments of developing countries. During negotiations for structural adjustment loans (SALs), partner governments agree to specific policy reforms whose implementation becomes a condition for disbursement of SAL funds. Conditionality varies with local circumstances but generally supports privatization of state enterprises, liberalization of the domestic economy, and openness in international trade.

Structural adjustment operations have often been controversial because they are explicitly political. Opposition or support reflects ideological perspectives, perceptions of who gains and who loses economically from a SAL, or beliefs about its environmental and social impacts. Environmental groups express particular concern about SALs' impacts on the rate of deforestation.

Debate about adjustment and deforestation has been fueled largely by anecdotes and a few country cases based on limited time-series data. Pandey and Wheeler broaden the analysis by combining a complete record of Bank SAL operations with a 38-year socioeconomic database for 112 developing countries.

They find that adjustment has greatly affected imports, exports, consumption, and production in many forest products sectors (such as fuelwood, sawnwood, panels, pulp, and paper). Some activities have increased and some have declined, but overall the effects have balanced each other. The net impact on domestic roundwood production, the authors' proxy for forest exploitation, has been almost exactly zero. Their results suggest that growth in roundwood production is explained well by population growth, urbanization, and world demand for forest products.

Their findings suggest that adjustment has not promoted domestic deforestation, but it has increased net imports of wood products, implying some displacement of pressure onto other countries' forest resources.

They also find that devaluations have significantly increased the exploitation of forest resources.

This paper—a product of Infrastructure and Environment, Development Research Group—is part of a larger effort in the group to understand the links between economic development and environmental change. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Yasmin D'Souza, room MC2-635, telephone 202-473-1449, fax 202-522-3230, email address ydsouza @worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at kpandey@worldbank.org or dwheeler1@worldbank.org. (36 pages)

2585. Law, Politics, and Finance

Thorsten Beck, Asli Demirgüç-Kunt, and Ross Levine
(April 2001)

A country's legal origin—whether British, French, German, or Scandinavian—helps explain the development of its financial institutions today. Legal systems differ in their ability to facilitate private exchanges and to adapt to support new financial and commercial transactions. A country cannot change its legal origin, but it can (with considerable effort) reform its judicial system by emphasizing the rights of outside investors, by providing more certain and efficient contract enforcement, and by creating a legal system that adapts more readily to changing economic conditions.

Beck, Demirgüç-Kunt, and Levine assess three established theories about the historical determinants of financial development. They also propose an augmented version of one of these theories.

The *law and finance view* stresses that different legal traditions emphasize to differing degrees the rights of individual investors relative to the state, which has important ramifications for financial development.

The *dynamic law and finance view* augments the law and finance view, stressing that legal traditions also differ in their ability to adapt to changing conditions.

The *politics and finance view* rejects the central role of legal tradition, stressing instead that political factors shape financial development.

The *endowment view* argues that the mortality rates of European settlers as they colonized various parts of the globe influenced the institutions they initially created, which has had enduring effects on institutions today. When initial conditions produced an unfavorable environment for European settlers, colonialists tended to create institutions designed to extract resources expeditiously, not to foster long-run prosperity.

The authors' empirical results are most consistent with theories that stress the role of legal tradition. The results provide qualified support for the endowment view. The data are least consistent with theories that focus on specific characteristics of the political structure, although politics can obviously affect the financial sector.

In other words, legal origin—whether a country has a British, French, German, or Scandinavian legal heritage—helps explain the development of the country's financial institutions today, even after other factors are controlled for. Countries with a French legal tradition tend to have weaker financial institutions, while those with common law and German civil laws tend to have stronger financial institutions.

This paper—a product of Finance, Development Research Group—is part of a larger effort in the group to understand the link between financial development and economic growth. The study was funded by the Bank's Research Support Budget under the research project "Financial Structure and Economic Development" (RPO 682-41). Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Agnes Yaptenco, room MC3-446, telephone 202-473-1823, fax 202-522-1155, email address ayaptenco@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at tbeck @worldbank.org, ademirguckunt @worldbank.org, or rlevine@csom.umn.edu. (71 pages)

2586. On the Urbanization of Poverty

Martin Ravallion
(April 2001)

The poor urbanize faster than the population as a whole. But experience across countries suggests that a majority of the poor will still live in rural areas long after most people in the developing world live in urban areas.

Ravallion identifies conditions under which the urban sector's share of the poor population in a developing country will be a strictly increasing and strictly convex function of its share of the total population.

Cross-sectional data for 39 countries and time-series data for India are consistent with the expected theoretical relationship.

The empirical results imply that the poor urbanize faster than the population as a whole. But the experience across developing countries suggests that a majority of the poor will still live in rural areas long after most people in the developing world live in urban areas.

This paper—a product of Poverty, Development Research Group—is part of a larger effort in the group to monitor overall trends in poverty in developing countries. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Catalina Cunanan, room MC3-542, telephone 202-473-2301, fax 202-522-1153, email address ccunanan @worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at mravallion @worldbank.org. (10 pages)

2587. Growth is Good for the Poor

David Dollar and Aart Kraay
(April 2001)

When average incomes rise, the average incomes of the poorest fifth of society rise proportionately. This holds across regions, periods, income levels, and growth rates. But relatively little is known about the broad forces that account for the variations across countries and across time in the share of income accruing to the poorest fifth.

When average incomes rise, the average incomes of the poorest fifth of society rise proportionately. This is a consequence of the strong empirical regularity that the share of income accruing to the bottom quintile does not vary systematically with average income. Dollar and Kraay document this empirical regularity in a sample of 92 countries spanning the past four decades and show that it holds across regions, periods, income levels, and growth rates.

Dollar and Kraay next ask whether the factors that explain cross-country differences in the growth rates of average incomes have differential effects on the poorest fifth of society. They find that several determinants of growth—such as good rule of law, openness to international trade, and developed financial markets—have little systematic effect on the share of income that accrues to the bottom quintile. Consequently, these factors benefit the poorest fifth of society as much as everyone else. There is some weak evidence that stabilization from high inflation and reductions in the overall size of government not only increase growth but also increase the income share of the poorest fifth in society. Finally, Dollar and Kraay examine several factors commonly thought to disproportionately benefit the poorest in society, but find little evidence of their effects. The absence of robust findings emphasizes that relatively little is known about the broad forces that account for the cross-country and intertemporal variation in the share of income accruing to the poorest fifth of society.

This paper—a product of Macroeconomics and Growth, Development Research Group—is part of a larger effort in the group to study growth and poverty reduction. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Emily Khine, room MC3-347, telephone 202-473-7471, fax 202-522-3518, email address kkhine@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at ddollar@worldbank.org or akraay@worldbank.org. (50 pages)

2588. The Regulation and Supervision of Banks around the World: A New Database

James R. Barth, Gerard Caprio Jr., and Ross Levine
(April 2001)

This new and comprehensive database on the regulation and supervision of banks in 107 countries should better inform advice about bank regulation and supervision and lower the marginal cost of empirical research.

International consultants on bank regulation and supervision for developing countries often base their advice on how their home country does things, for lack of information on practice in other countries. Recommendations for reform have tended to be shaped by bias rather than facts.

To better inform advice about bank regulation and supervision and to lower the marginal cost of empirical research, Barth, Caprio, and Levine present and discuss a new and comprehensive database on the regulation and supervision of banks in 107 countries. The data, based on surveys sent to national bank regulatory and supervisory authorities, are now available to researchers and policymakers around the world.

The data cover such aspects of banking as entry requirements, ownership restrictions, capital requirements, activity restrictions, external auditing requirements, characteristics of deposit insurance schemes, loan classification and provisioning requirements, accounting and disclosure requirements, troubled bank resolution actions, and (uniquely) the quality of supervisory personnel and their actions.

The database permits users to learn how banks are currently regulated and supervised, and about bank structures and deposit insurance schemes, for a broad cross-section of countries.

In addition to describing the data, Barth, Caprio, and Levine show how variables may be grouped and aggregated. They also show some simple correlations among selected variables.

In a companion paper ("Bank Regulation and Supervision: What Works Best") studying the relationship between differences in bank regulation and supervision and bank performance and stability, they conclude that:

• Countries with policies that promote private monitoring of banks have better bank performance and more stability. Countries with more generous deposit insurance schemes tend to have poorer bank performance and more bank fragility.

• Diversification of income streams and loan portfolios—by not restricting bank activities—also tends to improve performance and stability. (This works best when an active securities market exists.) Countries in which banks are encouraged to diversify their portfolios domestically and internationally suffer fewer crises.

This paper—a product of Finance, Development Research Group, and the Financial Sector Strategy and Policy Department—is part of a larger effort in the Bank to compile data on financial regulation and supervision and the advise countries on what works best. The study was funded by the Bank's Research Support Budget under the research project "Bank Regulation and Supervision: What Works and What Does Not." The companion paper and data may be downloaded at *www.worldbank.org/research/projects/bank_regulation.htm).* Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Agnes Yaptenco, room MC3-446, telephone 202-473-8526, fax 202-522-1155, email address ayaptenco@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at jbarth@business.auburn.edu, gcaprio@worldbank.org, or rlevine@csom.umn.edu. (87 pages)

2589. Implementing the Market Approach to Enterprise Support: An Evaluation of Ten Matching Grant Schemes

David A. Phillips
(April 2001)

This evaluation of ten matching grant funds for enterprise development concludes that matching grant funds address the need to build domestic capacity to support businesses. Performance has been mixed, however, and best practice models are needed. Grant funding may be justified for technical knowhow, but support should be temporary and should be phased out as soon as the main objective, market takeoff, is achieved.

Developing viable new business is critical to recovery and long-term growth, especially in transition economies. There has been a long history of public support of enterprise development, starting with centralized state agency initiatives but moving more recently to decentralized instruments for development of the business services market.

The window of time during which the benefits of intervention are likely to be greatest: when a market is in its infancy and its development is constrained by uncertainty and lack of information. Interventions for enterprise support should be demand-responsive and flexibly organized. In some circumstances, centralized assistance may still be effective, but it is generally better to use competitive private service providers responding to enterprises' changing needs. The main task is to stimulate the private services sector, improving its capacity to respond to the demands of new and expanding private enterprises.

Support for enterprises has tended to be either free or heavily subsidized. But such subsidies can be justified only if interventions efficiently supply public goods. Providing technical and management knowhow can be a public good if it generates externalities—if, for example, knowhow benefits can be disseminated at proportionately low additional cost. Any subsidy for an intervention should be temporary and should be phased out when the main objective of intervention is achieved—that is, when the market takes off.

Grants should generally be for knowhow, not for equipment. There may be a case for unbundling the knowhow component of loans (including feasibility studies and follow-up expert services) for grant funding. A package combining loans and grants—through a single financial institution or through separate institutions—may work, provided safeguards can be put in place to prevent perverse use of grants.

The matching grant model, which is used increasingly in the World Bank and elsewhere, is one solution—but it must be justified and carefully designed. After evaluating ten matching grant funds, Phillips concludes that performance is mixed. Best practice models are needed. Ensuring economic benefits requires proactive management with clear objectives of market facilitation ("making a market"). And it requires a balance between rapid grant approval procedures and careful selection of services for grants.

This paper—a product of the Private and Financial Sectors Development Unit, Europe and Central Asia—is part of a larger effort in the region to develop new instruments to support enterprise restructuring and development, especially in former Soviet Union economies. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Sylvia Torres, room H6-298, telephone 202-473-9012, fax 202-522-0005, email address storres@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at dphillips2@worldbank.org or davidphillips1@msn.com. (27 pages)

2590. Household Welfare and Poverty Dynamics in Burkina Faso: Empirical Evidence from Household Surveys

Hippolyte Fofack, Célestin Monga, and Hasan Tuluy
(April 2001)

The benefits from growth following devaluation of the CFA franc in Burkina Faso in 1994 were undermined by increasing income inequality. Factors that fed that growth in income inequality: disparities in wages and in educational attainment and unequal access to productive assets.

Fofack, Monga, and Tuluy investigate the dynamics of poverty and income inequality in a cross-section of socioeconomic groups and geographical regions over the five-year growth period following the 1994 devaluation of the CFA franc in Burkina Faso.

Results show rapidly increasing urban poverty accompanied by rising income inequality, declining poverty-growth elasticities, and significant changes in the poverty map. In rural areas, the incidence of poverty remained the same and income inequality did not increase.

In contrast, the distribution of welfare across socioeconomic groups was more stable. The rank ordering of socioeconomic groups on the welfare scale did not change during the post-devaluation growth period.

Poverty remains largely a rural phenomenon, whose inelastic nature may justify a shift toward growth-oriented policies that at least maintain the rural poor's share of income to reduce poverty in the medium term.

Among factors that feed into income inequality: disparities in wages and in educational attainment and unequal access to productive assets (especially human capital).

This paper—a joint product of Macroeconomics 3 and Macroeconomics 4, Economic Management and Social Policy Group; and Burkina Faso, Mali, Mauritania, São Tomé and Principe Country Director's Office, Africa Region—is part of a larger effort in the region to better understand the dynamics of poverty and how the benefits of growth are distributed in Sub-Saharan African countries. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Nadege Nouviale, room J7-269, telephone 202-473-4514, fax 202-473-8466, email address nnouviale@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at hfofack@worldbank.org, cmonga @worldbank.org, or htuluy@worldbank.org. (32 pages)

2591. Hirschmanian Themes of Social Learning and Change

David Ellerman
(April 2001)

Albert Hirschman developed his strategy of unbalanced growth in response to the postwar theories of the "big push," development planning, and balanced growth. Ellerman "translates" today's debate about the effectiveness of conditionality and adjustment lending back into the old debate about balanced versus unbalanced growth.

Many development strategies assume (or desperately hope) that a country already has the capacity to plan and implement institutional reform or that such reform can be pushed through with the external pressures of aid and conditionalities. In a decentralized reform strategy, developmental change is induced not by government fiat but by releasing and channeling local energies in smaller projects that will in due course spread through links, learning, imitation, and benchmarking.

A "Christmas tree" of conditionalities hung on an adjustment loan is generally ineffective in getting a country to develop "ownership" of reform or in generating sustainable change. Development agencies need to work toward client governments' genuine commitment to policy reform rather than believe that they can "buy" such commitment with aid money.

But how does a country get from here to there? Here is where the Hirschmanian notion of unbalanced growth can be "rediscovered." A country that has already developed a "good policy environment" is like a country that can implement the "balanced growth plans" of the earlier debate. Such a country would be well on its way to development.

When the central government lacks such a capability, the Hirschmanian approach is to look for "hidden rationalities" in small areas or on the periphery and then help the small beginnings to spread—using, where possible, the natural pressures of linkages. Rather than try to put all the pieces of a jigsaw puzzle together at once to make it look like the picture on the box, one starts in the small areas where the pieces are starting to fit together and builds outward, using the links between the pieces.

Ellerman shows several authors arriving at a similar strategy from different starting points. Similar ideas underlie the Japanese system of just-in-time production based on inventory, local problem solving, benchmarking, and continuous improvement; Charles Lindblom's theory of incrementalism and muddling through; Donald Schön and Everett Rogers's treatment of decentralized social learning; and Charles Sabel's theory of learning by monitoring.

This paper—a product of the Office of the Vice President and Chief Economist, Development Economics—is part of a larger effort in the Bank to improve aid effectiveness. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Beza Mekuria, room MC4-404, telephone 202-458-2756, fax 202-522-1158, email address bmekuria @worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at dellerman @worldbank.org. (20 pages)

2592. Management of Oil Windfalls in Mexico: Historical Experience and Policy Options for the Future

Stephen Everhart and Robert Duval-Hernandez
(April 2001)

Policy options for protecting Mexico's economy from volatility in oil revenues without eliminating the benefits from rising prices include a stabilization fund and hedging strategies on international markets. A stabilization fund and hedging strategies can complement each other—the fund working as the main recipient of revenues, and the hedging strategies managing short-lived movements in prices. This joint strategy would reduce the size of the fund and the probability of its going bankrupt.

The macroeconomic impact of commodity windfalls has provided fertile ground for research since the 1970s. Particularly affected are developing economies that rely heavily on commodity exports. In the case of oil windfalls, cross-country experience is vast: Indonesia, Kazakhstan, Mexico, Nigeria, the Russian Federation, and República Bolivariana de Venezuela have all been buffeted by such windfalls. Everhart and Duval-Hernandez investigate Mexico's experience.

They provide an overview of oil's impact on the Mexican economy and of the management of oil rents engineered by the government from the 1970s to date. A third of government revenues come from the hydrocarbon sector—especially oil exports. The reliance of public finances on a single commodity means that shocks threaten the economy's fiscal balance and stability.

Policy options for protecting the economy from volatility in oil revenues without eliminating the benefits from rising prices include a stabilization fund and hedging strategies on international markets, which the authors discuss. The stabilization fund smooths consumption and reduces the costs associated with volatile spending. The fund and hedging strategies can complement each other—the fund working as the main recipient of revenues, and the hedging strategies managing short-lived movements in prices. This joint strategy would also reduce the size of the fund and the probability of its going bankrupt.

This paper—a joint product of the Mexico Country Management Unit and the Economics Department, International Finance Corporation—is part of a larger effort to foster research on macroeconomic management in developing economies. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Marylou Kam-Cheong, room F7K-270, telephone 202-473-9618, fax 202-974-4306, email address mkam-cheong@ifc.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at severhart@ifc.org or rd75@cornell.edu. (32 pages)

2593. Changing Trade Patterns after Conflict Resolution in the South Caucasus

Evgeny Polyakov
(April 2001)

Peace in the South Caucasus will improve the region's economies in different ways. How much they will benefit depends on the strength of their supply response to demand in opening markets. The poor business environment and incomplete industrial restructuring act as constraints on export performance.

Since the breakup of the USSR, the South Caucasus region has experienced a range of political conflicts, resulting in a number of hot and cold wars and border closures. Polyakov analyzes the probably short-term impacts of peace in the region as a result of a resolution of the conflict between Armenia and Azerbaijan over the Nagorny Karabakh region and an end to the associated trade blockades, with an emphasis on Armenia, Azerbaijan, and Georgia.

The conflict has seriously distorted trade flows in the region, disrupted transport routes, and stifled export and import opportunities for Armenia and Azerbaijan. Georgia has enjoyed higher-than-normal transit through its territory. Trade has stopped in gas (from Azerbaijan to Armenia) and electricity (from Armenia to Turkey). Transport tariffs are unusually high, aggravated by government-imposed transit fees (taxes).

Over time, trade restrictions have eased and trading partners have found ways to conduct trade despite closed borders and blockades—but at a cost.

Applying a gravity model to regional trade, Polyakov concludes that South Caucasus countries trade enough with the CIS countries and politically friendly neighbors, but too little with the European Union, the United States, and hostile neighbors. Lifting the blockades would alleviate trade distortions and bring about short-term improvements, including:

- More rational trade flows.
- A resumption of (or an increase in) regional trade in major commodities such as energy.
- Lower prices or higher profit margins (or both) on some important consumption and production goods.

With peace, Armenia could more than double its exports if Azerbaijani and Turkish markets open, which could reduce Armenia's trade deficit by a third to a half and increase its GDP by 30 percent. Improving transport routes would produce immediate savings and relieve pressure on domestic prices, especially for energy.

Azerbaijan could increase its exports by \$100 million, or 11 percent of 1999 levels, reducing its trade deficit by a quarter and raising its GDP by 5 percent. Its exports and imports would benefit from transport savings.

Transit through Georgia might decline, but probably not by more than a quarter of the freight service surplus.

This paper—a product of Poverty Reduction and Economic Management Sector Unit, Europe and Central Asia Region—is part of a larger effort in the region to explore growth prospects in the CIS economies. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Zakia Nekaien-Nowrouz, room H4-246, telephone 202-473-9057, fax 202-619-1197, email address znekaiennowrouz@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at evpolyakov@yahoo.com. (42 pages)

2594. Committing to Civil Service Reform: The Performance of Pre-Shipment Inspection under Different Institutional Regimes

Noel Johnson
(April 2001)

If the only solution tried for customs corruption and evasion in a developing country is to outsource certain customs functions to a pre-shipment inspection (PSI) company, PSI will prove more of a fiscal burden than a panacea. PSI works best in countries where the customs service already performs fairly well—by reducing the costs of catching evaders.

Typically a developing country's customs service brings in a large share of its revenues and accounts for an even larger share of its corruption. One prescription popular among development agencies for reducing corruption and customs evasion by importers has been to outsource certain customs functions to pre-shipment inspection (PSI) companies.

More than 35 countries employ PSI as a second-best solution to corruption in customs collection. But whether PSI companies are an effective alternative to comprehensive civil service reform has been widely questioned. The success of PSI contracts depends on the institutional environment—the formal and informal rules of enforcement that affect different agents' incentives—but the reasons for PSI's success or failure in different institutional settings have not been well understood.

Johnson presents a simple model highlighting the principal-agent problems in a typical PSI contract. Based on his conclusions, he suggests that PSI should be thought of less as a second-best alternative to customs reform (in countries where the customs service performs poorly) than as a cost-effective complement to reforms in "intermediate" cases (countries where the customs service already performs fairly well). PSI could help in these intermediate cases by reducing the costs of catching evaders. This would make it easier for the ministry of finance to maintain separate reforms to eliminate corruption between customs and importers.

In countries where the customs service is powerful—is highly independent and controls the country's borders—and where the government does not have the institutional ability to put through the complementary reforms essential for using PSI successfully, introducing a PSI contract will add to the burdens of public finance rather than provide the hoped-for panacea.

This paper—a joint product of the Ukraine/Belarus Country Unit, Europe and Central Asia Region, and the Public Sector Management Division, Poverty Reduction and Economic Management Network—is part of a larger effort in the Bank to better understand the challenges posed by institutional reform and development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Luca Barbone, room H12-153, telephone 202-473-2556, fax 202-477-3288, email address lbarbone@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at johnson@wueconc.wustl.edu. (19 pages)

2595. Unrestricted Market Access for Sub-Saharan Africa: How Much Is It Worth and Who Pays?

Elena Ianchovichina, Aaditya Mattoo, and Marcelo Olarreaga
(April 2001)

The European Union, Japan, and the United States have recently announced initiatives to improve market access for the poorest countries. How would these initiatives affect Sub-Saharan Africa and the rest of the world?

The European Union, Japan, and the United States have recently announced initiatives to improve market access for the poorest countries. Ianchovichina, Mattoo, and Olarreaga assess the impact on Sub-Saharan Africa of these initiatives and others that might be taken.

They find that fully unrestricted access to *all* the Quad countries (Canada, the European Union, Japan, and the United States) would produce substantial gains for Sub-Saharan Africa, leading to a 14 percent increase in non-oil exports ($2.5 billion) and boosting real incomes by about 1 percent ($1.8 billion). Most of these gains would come from preferential access to the highly protected Japanese and European agricultural markets, especially the heavily protected Japanese market for meat and certain cereal grains.

The smallness of Sub-Saharan Africa's trade ensures that the costs of trade diversion for the Quad, other developing countries, and the world would be on the whole negligible. One concern, however, is that preferential access to protected markets might lead Sub-Saharan Africa to produce goods in which it does not have a global comparative advantage, and the future erosion of these preferences might lead to adjustment costs.

This paper—a product of Trade, Development Research Group—is part of a larger effort in the group to understand the implications of improved market access for developing countries. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, email address ltabada@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at eianchovichina@worldbank.org, amattoo@worldbank.org, or molarreaga@worldbank.org. (29 pages)

2596. Shaping Future GATS Rules for Trade in Services

Aaditya Mattoo
(April 2001)

The General Agreement on Trade in Services (GATS) has created a more secure environment for trade in services, but it has not generated the negotiating momentum to reduce protection or the rules to ensure that protection takes a desirable form. In dealing with the trade-impeding impact of domestic regulations, it has achieved even less.

The new round of negotiations has begun with a mechanical sense of "since we said we would, therefore we must," says Mattoo. To make the General Agreement on Trade in Services (GATS) more effective at liberalization, Mattoo suggests improving the agreement's rules, countries' specific commitments, and the negotiating methodology:

- Wasteful regulations and entry restrictions pervade trade in services. Unlike the GATT, the GATS has created no hierarchy of instruments of protection. It may be possible to create a legal presumption in favor of instruments (such as fiscal measures) that provide protection more efficiently.
- Many countries have taken advantage of the GATS to create a more secure trading environment by making legally binding commitments to market access. The credibility of reform would increase with wider commitments to maintain current levels of openness or to increase access in the future.
- Multilateral rules on domestic regulations can help promote and consolidate domestic regulatory reform, even when the rules are designed primarily to prevent the erosion of market access for foreign providers. The pro-competitive principles developed for basic communications could be extended to other network-based services sectors, such as transport (terminals and infrastructure) and energy services (distribution networks). The "necessity test" instituted for accounting services could be applied to instruments in other sectors (so that doctors judged competent in one jurisdiction wouldn't have to be retrained for another, for example).
- Anticompetitive practices that fall outside the jurisdiction of national competition law may be important in such sectors as maritime, air transport, and communications services. Strengthened multilateral rules are needed to reassure small countries with weak enforcement capacity that the gains from liberalization will not be appropriated by international cartels.
- Explicit departures from the most-favored-nation rule matter most in such sectors as maritime transport, audiovisual services, and air transport services—which have been excluded from key GATS disciplines. Implicit discrimination can be prevented by developing rules to ensure the nondiscriminatory allocation of quotas and maintaining the desirable openness of the GATS provision on mutual recognition agreements.
- Reciprocity must play a greater role in negotiations, if the GATS is to advance liberalization beyond measures taken independently.

This paper—a product of Trade, Development Research Group—was prepared for a National Bureau of Economic Research conference on Trade in Services, held in Seoul in June 2000, and is part of a larger effort in the group to assess the implications of liberalizing trade in services. The research is supported in part by the U.K. Department for International Development. Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1155, email address ltabada@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at amattoo@worldbank.org. (36 pages)

2597. Measuring the Impact of Minimum Wages: Evidence from Latin America

William F. Maloney and Jairo Nuñez, with Wendy Cunningham, Norbert Fiess, Claudio Montenegro, Edmundo Murrugarra, Mauricio Santamaria, and Claudia Sepulveda
(April 2001)

Simple numerical measures of the minimum wage may offer deceptive indications of its impact. Alternative measures, such as kernel density or cumulative distribution plots, are more reliable, and highlight influences higher in the wage distribution or on the informal sector. Panel employment data from Colombia—where minimum wages seem high and binding—show that the minimum wage can have important impacts on wages and unemployment across the wage distribution.

Maloney, Nuñez, and colleagues provide an overview of minimum wage levels in Latin America and their true impact on the distribution of wages, using both numerical measures and kernel density plots for eight countries (Argentina, Bolivia, Brazil, Chile, Colombia, Honduras, Mexico, and Uruguay). They especially try to identify "numeraire" effects—where the minimum is used as a reference higher in the wage distribution—and "lighthouse" effects—where it influences wage setting in the unregulated or "informal" sector.

Their main findings: First, statutory minimum wages are often misleading, and graphical methods may be more reliable. Second, the minimum wage's effect on wage setting extends far beyond what is usually considered and probably beyond the effect in industrial countries.

Using panel employment data from Colombia, where minimum wages seem high and binding, the authors quantify the minimum wage's effects on wages and on the probability of becoming unemployed. The Colombian case confirms the evidence offered by kernel density estimates:

- The minimum wage can have an important impact on wage distribution in the neighborhood of the minimum wage.
- The effects echo up the wage distribution in a clear demonstration of the "numeraire" effect. That this effect is stronger in Latin America than in the United States suggests that the minimum wage induces further-reaching rigidities in the labor market. The tradeoff between any possible effect on poverty and reduced flexibility is likely to be more severe in countries where this is the case. The effects on employment, and unemployment, are substantial.
- Informal salaried wages are also affected, confirming the graphical evidence of strong lighthouse effects. Self-employment earnings are not, however, confirming that the minimum wage is not simply serving as a measure of inflationary expectations.

This paper—a product of the Poverty Sector Unit and the Office of the Chief Economist, Latin America and the Caribbean Region—is part of a larger effort in the region to measure and understand the impact of labor market rigidities on employment and poverty. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Anne Pillay, room I8-104, telephone 202-458-8046, fax 202-522-2119, email address apillay@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. William Maloney may be contacted at wmaloney@worldbank.org. (26 pages)

2598. Weightless Machines and Costless Knowledge: An Empirical Analysis of Trade and Technology Diffusion

Giorgio Barba Navaretti and Isidro Soloaga
(May 2001)

Knowledge, lacking weight and other physical attributes and being intangible, is a hidden factor of production, making economies grow "weightless." But knowledge is also embedded in technology. If, because of low productivity, poor countries keep buying low-technology machines, will they remain stuck in a low-technology, low-growth trap?

Barba Navaretti and Soloaga examine the impact on productivity of technologies imported by a sample of developing and transition economies in Central and Eastern Europe and the Southern Mediterranean—economies becoming increasingly integrated with the European Union.

They depart from earlier studies of technology diffusion by focusing on the technology embodied in the machines imported. Earlier work focused mostly on spillovers from foreign research and development conveyed through trade, without controlling for the characteristics of the goods imported.

The authors jointly estimate the choice of foreign technology and its impact on domestic productivity for a set of manufacturing sectors. They proxy the technological level of the machines imported by using an index relating the unit value of the machines imported by a given country to the unit value of similar machines imported by the United States.

At any point in time between 1989 and 1997, there is a persistent (even increasing) gap between the unit values of the machines imported by the United States and those imported by the sample of developing countries. Although developing economies buy increasingly productive machines, the technology embodied in the machines persistently lags behind that in the machines purchased by the United States—so far as unit values are good proxies of embodied technologies.

Barba Navaretti and Soloaga also find that productivity growth in manufacturing depends on the types of machines imported in a given industry. So although the optimal choice for developing countries is to buy cheaper, less sophisticated machines, given local skills and factor prices, this choice has a cost in long-run productivity growth. If productivity is low, countries buy low- technology machines, but doing so keeps them in a low-technology, low-growth trap.

This paper—a product of Trade, Development Research Group—is part of a larger effort in the group to assess the role of trade in technology diffusion. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, email address ltabada@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at barba@unimi.it or isidros@iadb.org. (29 pages)

2599. State Ownership and Labor Redundancy: Estimates Based on Enterprise-Level Data from Vietnam

Patrick Belser and Martín Rama
(May 2001)

To predict the number of workers who will lose their jobs if state-owned enterprises *are privatized or restructured, several approaches have been taken: drawing on international experience, accepting estimates from current directors of state enterprises, and inferring the number of redundancies from ad hoc indicators of profitability, productivity, or labor cost. All three approaches may be irrelevant and inferior to systematically comparing employment levels across similar enterprises that differ in the share of capital owned by the state.*

Privatizing or restructuring state-owned enterprises may lead to massive layoffs, but the number of redundant workers is usually unknown beforehand. Belser and Rama estimate labor redundancy by comparing employment levels across enterprises with different degrees of state ownership.

In their model, state enterprises are a hybrid between labor-managed enterprises and profit-maximizing enterprises, with the profit motive becoming less prominent as the state share of capital increases. This model leads to an employment equation that is estimated using an enterprise database from Vietnam.

In this database, constructed especially for this paper, roughly a third of the enterprises are fully state-owned, a third are fully private, and a third are joint ventures between the state and the private sector. The employment equations control for sector activity, region, and the enterprise's age, among other variables.

The results suggest that if the state share of capital were brought down to zero, roughly half of the workers in the corresponding enterprises would be redundant. This is more than 10 times the estimate by the current enterprise directors.

The results also show a wide dispersion of redundancy across sectors of activity.

There is only a weak correlation between estimated labor redundancy and 12 ad hoc indicators of profitability, productivity, and labor cost. But the correlation between most ad hoc indicators also is weak, suggesting that these indicators are not reliable tools for identifying the most overstaffed enterprises.

This paper—a product of Public Service Delivery, Development Research Group—is part of a larger effort in the group to understand labor issues in public sector reform. The study was supported by the Bank's Research Support Budget under the research project "Public Sector Downsizing, Phase II" (RPO 683-67). It was also supported by the Vietnam Country Office, East Asia and Pacific Region. Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Hedy Sladovich, room MC2-609, telephone 202-473-7698, fax 202-522-1154, email address hsladovich@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Martín Rama may be contacted at mrama@worldbank.org. (42 pages)

2600. Rent-Sharing, Hold-Up, and Manufacturing Wages in Côte d'Ivoire

Jean-Paul Azam and Catherine Ris
(May 2001)

Labor costs in Francophone Africa are considered high by the standards of low-income countries, at least in the formal sector. Workers appear to have some bargaining power and, in Côte d'Ivoire, can force renegotiation of labor contracts in response to new investments.

Labor costs in Francophone Africa are considered high by the standards of low-income countries, at least in the formal sector. Are they a brake on industrialization or the result of successful enterprise development? Are they imposed on firms by powerful unions or government regulations, or a by-product of good firm performance?

Azam and Ris empirically analyze what determines manufacturing wages in Côte d'Ivoire, using an unbalanced panel of individual wages that allows them to control for observable firm-specific effects. They test the rent-sharing and holdup theories of wage determination, as well as some aspects of efficiency-wage theories.

Their results lean in favor of both rent-sharing and holdup, suggesting that workers have some bargaining power and that in Côte d'Ivoire workers can force renegotiation of labor contracts in response to new investments.

This paper—a product of Public Service Delivery, Development Research Group—is part of a larger effort in the group to understand the impact of labor market policies and institutions on economic performance. The study was funded by the Bank's Research Support Budget under the research project "The Impact of Labor Market Policies and Institutions on Economic Performance" (RPO 680-96). Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Hedy Sladovich, room MC2-609, telephone 202-473-7698, fax 202-522-1154, email address hsladovich@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Jean-Paul Azam may be contacted at azam@univ-tlsel.fr. (24 pages)

2601. The WTO Agreement and Telecommunications Policy Reform

Peter Cowhey and Mikhail M. Klimenko
(May 2001)

Happily, the revolution going on in the telecommunications industry is benign. Technological change and competition are making possible changes considered improbable even 15 years ago. The WTO Agreement on Basic Telecommunications Services created a new regime for the world market. Now we must pay close attention to regulatory fundamentals.

Every country serious about introducing competition finds that the transition from monopoly to competition is both economically rewarding and laden with policy dilemmas. As a new century begins, we have an essentially new market for telecommunications. Digital technology forced a reexamination of the opportunity costs of protecting traditional telecommunications equipment and service suppliers. An inefficient market for telecommunications threatened competitiveness in the computer, software, and information industry markets.

Meanwhile, after dislocations created by global stagflation through the early 1980s, developing countries became interested in privatization of state enterprises as a tool of economic reform—and state telephone companies were especially promising targets for privatization. Those countries began exploring options for allowing selective competition, as phone companies in major industrial countries began looking to foreign markets for new business opportunities.

The WTO Agreement on Basic Telecommunications Services created a new regime for the world market. Now we must pay close attention to regulatory fundamentals:

• Low barriers to entry in the market for communications services.

• Effective rebalancing of rates for services during the market transition.

• Strong interconnection policies.

• The creation of independent regulatory authorities with the resources and power necessary to foster competition and safeguard consumer welfare.

Cowhey and Klimenko assess how developing and transition economies have fared in profiting from changes in the telecommunications market. They also examine the policy challenges that remain, paying special attention to the global market and regulatory milieu fostered by the 1997 WTO agreement. They ask what this latest transformation has taught us about wise management of this vital part of the world economy's infrastructure. They focus on the economics of managing the transition to competition, the design of proper regulatory policies and processes, and the embedding of domestic telecommunications in the world market.

This paper—a product of Trade, Development Research Group—is part of a larger effort in the group to help developing countries formulate negotiating positions for WTO talks. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, mail stop MC3-303, telephone 202-473-6896, fax 202-522-1159, email address ltabada @worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Mikhail Klimenko may be contacted at mklimenko @ucsd.edu. (67 pages)

2602. Sugar Policy and Reform

Donald F. Larson and Brent Borrell
(May 2001)

Interventions in sugar markets come about for many reasons. Often the consequences of these policies persist even when the circumstances that motivated them change. Or the underlying problems that motivated past interventions remain even when it's clear that current approaches have failed. Reform of sugar markets needs to go beyond eliminating failed policies—and find lasting solutions.

Reviewing cross-country experience with sugar policies and policy reform, Larson and Borrell conclude that long-standing government interventions—rooted in historical trade arrangements, fear of shortages, and conflicting interests between growers and sugar mills—often displace both the markets and the institutions required to produce efficient outcomes. Arrangements rooted in colonial eras still shape policies and trade in the United States, the European Union, and many developing countries.

Once policies and institutions are put in place, households and the value of investments grow dependent on them, even as their usefulness fades. Firms and households make decisions that are costly to reverse. And the result is a legacy of path-dependent policies, in which approaches and instruments are greatly influenced by past agreements and previous interventions.

The cumulative effects of these interventions are embodied in livelihoods, political institutions, capital stocks, and factor markets—which not only dictate the starting point for reform but also determine which reform paths are feasible.

Experiments with public ownership, common in many countries, have not succeeded. So most countries have initiated some measure of market reform. And events relating to NAFTA, Lomé, and expansion of the EU may bring about significant changes in the EU and U.S. sugar regimes, with cascading effects on other countries.

Common problems in the sector include determining cane quality, finding methods for fairly sharing revenues from joint production, finding ways to take advantage of preferential trade arrangements with minimal negative consequences, finding ways to finance and encourage research and other activities with common benefits, identifying practices that facilitate equitable, sustainable privatization, and determining the relationship between sugar market reform and markets in land, water, credit, and other inputs.

This paper—a product of Rural Development, Development Research Group—is part of a larger effort in the group to examine the role of policy and policy reform in rural development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Pauline Kokila, room MC3-305, telephone 202-473-3716, fax 202-522-1151, email address pkokila @worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at dlarson@worldbank. org or bborrell@intecom.com.au. (50 pages)

2603. How the Quality of Institutions Affects Technological Deepening in Developing Countries

George R. G. Clarke
(May 2001)

The lower the risk of expropriation and the greater the rule of law (that is, the greater the security of property and contract rights), the greater the research and development spending in developing countries and the greater the likelihood that foreign direct investment will increase—two routes to technological deepening.

Clarke assesses the effect of institutional quality on research and development (R&D) expenditures in developing countries. He finds that the risk of expropriation and the rule of law—two measures used as proxies for the security of property and contract rights—are correlated with R&D spending. Both institutional variables increase as institutional quality improves (that is, as the risk of expropriation decreases and the rule of law improves). This suggests that strong institutions encourage greater spending on R&D.

R&D is not the main way developing countries gain access to technology, but this result is interesting for at least two reasons:

• R&D might encourage technological deepening better than other approaches developing countries take to gain access to technology (for example, through foreign direct investment or through imports of capital goods).

• Past work has shown that another important way countries gain access to technology—foreign direct investment—is also positively correlated with institutional quality. That is, foreign direct investment increases as institutional quality improves.

This paper—a product of Regulation and Competition Policy, Development Research Group—is part of a larger effort in the group to identify institutional factors that affect enterprise productivity and growth. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433.

Please contact Paulina Sintim-Aboagye, room MC3-422, telephone 202-473-8526, fax 202-522-1155, email address psintimaboagye@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at gclarke @worldbank.org. (22 pages)

2604. Eliminating Excessive Tariffs on Exports of Least Developed Countries

Bernard Hoekman, Francis Ng, and Marcelo Olarreaga
(May 2001)

Average most-favored-nation tariffs in the "Quad" (Canada, the European Union, Japan, and the United States) have fallen to about 5 percent. But tariffs more than three times the average most-favored-nation duty are not uncommon in the Quad and have a disproportionate effect on exports of least developed countries. Giving the poorest countries duty-free access for peak-tariff products would increase their total annual exports by roughly $2.5 billion.

Most goods imported from developing countries enter Quad markets duty-free, and average tariffs in Quad markets are very low. But tariffs for some commodities are over 100 percent. Such "tariff peaks" are often concentrated in products developing countries want to export: agricultural and food products—especially such staples as sugar, cereals, and fish; fruits and vegetables; food products with a high sugar content; and tobacco and alcoholic beverages—and products from such labor-intensive sectors as apparel and footwear.

Giving least developed countries full duty- and quota-free access in the Quad for peak-tariff products would increase their total annual exports by 11 percent—or roughly $2.5 billion. Exports to Quad countries of peak-tariff products would expand by 30–60 percent.

Considering that peak-tariff items account for only a small share of developing countries' exports, granting least developed countries duty-free access would have only a negligible impact on other developing countries. For the same reason, Quad imports increase only marginally, suggesting that this factor should not constrain implementation of duty-free access for the poorest countries.

This paper—a product of Trade, Development Research Group—is part of a larger effort in the group to analyze impediments to developing country export growth. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, email address ltabada@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at bhoekman@worldbank.org, fng@worldbank.org, or molarreaga @worldbank.org. (51 pages)

2605. The Macroeconomic Impact of Bank Capital Requirements in Emerging Economies: Past Evidence to Assess the Future

Maria Concetta Chiuri, Giovanni Ferri, and Giovanni Majnoni
(May 2001)

Analysis of data from emerging economies suggests that, unless properly managed, the introduction of higher minimum bank capital requirements may well induce an aggregate slowdown or contraction of bank credit in these economies.

Chiuri, Ferri, and Majnoni test for emerging economies the hypothesis—previously verified only for the Group of 10 (G-10) countries—that enforcing bank capital asset requirements exerts a negative effect on the supply of credit. Their econometric analysis of data on individual banks suggests three main results:

- Enforcement of capital asset requirements—according to the 1988 Basel standard—significantly curtailed credit supply, particularly at less-well-capitalized banks.
- This negative effect is not limited to countries enforcing capital asset requirements in the aftermath of a currency or financial crisis.
- The adverse impact of capital asset requirements on the credit supply was somewhat smaller for foreign-owned banks, suggesting that opening up to foreign investors may be an effective way to partly shield the domestic banking sector from negative shocks.

Overall, by inducing banks to reduce their lending, enforcement of capital asset requirements may well have induced an aggregate slowdown or contraction in credit in the emerging economies examined.

The results have relevance for the ongoing debate on the impact of the revision of bank capital asset requirements contemplated by the 1999 Basel proposal. They suggest that in several emerging economies the phasing in of higher capital requirements needs to be carefully managed to avoid a credit supply retrenchment, which should not be underestimated.

This paper—a product of the Financial Sector Strategy and Policy Department—is part of a larger effort in the department to study the impact of financial regulation on economic development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Elena Mekhova, room MC9-622, telephone 202-458-5984, fax 202-522-2031, email address emekhova@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Giovanni Majnoni may be contacted at gmajnoni@worldbank.org. (28 pages)

2606. Exchange Rate Risk Management: Evidence from East Asia

George Allayannis, Gregory W. Brown, and Leora F. Klapper
(May 2001)

In a large sample of East Asian nonfinancial corporations, firms using foreign currency derivatives had distinctive characteristics, such as larger size and foreign debt exposures. Unlike in studies of U.S. firms, there was only weak evidence that liquidity-constrained firms with greater growth opportunities hedged more. Firms appeared to use foreign earnings as a substitute for hedging with derivatives, and to engage in "selective" hedging. There was no evidence that East Asian firms eliminated their foreign exchange exposure by using derivatives. And firms using derivatives before the crisis performed just as poorly as nonhedgers during the crisis.

The recent East Asian financial crisis provides a natural experiment for investigating foreign exchange risk management by nonfinancial corporations. During this period, the financial crisis exposed local firms to large depreciations in exchange rates and reduced access to foreign capital.

Allayannis, Brown, and Klapper explore the exchange rate hedging practices of firms that hedged exposure to foreign debt in eight East Asian countries between 1996 and 1998.

They identify and characterize East Asian companies that used foreign currency derivatives, documenting differences in size, financial characteristics, and exposure to domestic and foreign debt.

They investigate the factors important in the use of foreign currency derivatives. Unlike studies of U.S. firms, they find limited support for existing theories of optimal hedging. Instead, they find that firms use foreign earnings as a substitute for hedging with derivatives. And they find evidence that firms engage in "selective" hedging.

They investigate the relative performance of hedgers during and after the crisis. They find no evidence that East Asian firms eliminated their foreign exchange exposure by using derivatives. Firms that used derivatives before the crisis performed just as poorly as nonhedgers during the crisis. After the crisis, firms that hedged performed somewhat better than nonhedgers, but this result appears to be explained by a larger post-crisis currency exposure for hedgers (an exchange rate risk premium), which had limited access to derivatives during this period.

This paper—a product of Finance, Development Research Group—is part of a larger effort in the group to study corporate finance and risk management. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Agnes Yaptenco, room MC3-446, telephone 202-473-1823, fax 202-522-1155, email address ayaptenco@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at allayannisy@darden.virginia.edu, gregwbrown@unc.edu, or lklapper @worldbank.org. (44 pages)

2607. The Economical Control of Infectious Diseases

Mark Gersovitz and Jeffrey S. Hammer
(May 2001)

If infectious people can infect other people, who in turn can infect others, and so on—the pure infection externality—government subsidies to affect private behavior should equally favor preventive and curative activities, if people recover to become susceptible again. Otherwise, other subsidy and tax strategies may make more sense.

Despite interesting work on infectious diseases by such economists as Peter Francis, Michael Kremer, and Tomas Philipson, the literature does not set out the general structure of externalities involved in the prevention and cure of such diseases. Gersovitz and Hammer identify two kinds of externality. First, infectious people can infect other people, who in turn can infect others, and so on, in what the authors call the *pure infection externality*. In controlling their own infection, people do not take into account the social consequence of their infection. Second, in the *pure prevention externality*, one individual's preventive actions (such as killing mosquitoes) may directly affect the probability of others becoming infected, whether or not the preventive action succeeds for the individual undertaking it.

Gersovitz and Hammer provide a general framework for discussing these externalities and the role of government interventions to offset them. They move the discussion away from its focus on HIV (a fatal infection for which there are few interventions) and on vaccinations (which involve plausibly discrete decisions) to more general ideas of prevention and cure applicable to many diseases for which interventions exhibit a continuum of intensities subject to diminishing marginal returns.

Infections and actions to prevent or cure them entail costs. Individuals balance those parts of different costs that they can actually control. In balancing costs to society, government policy should take individual behavior into account. Doing so requires a strategy combining preventive and curative interventions to offset both the pure infection externality and the pure infection externality. The relative importance of the strategy's components depends on:

- The biology of the disease—including whether an infection is transmitted from person to person or by vectors.
- The possible outcomes of infection: death, recovery with susceptibility, or recovery with immunity.
- The relative costs of the interventions.
- Whether interventions are targeted at the population as a whole, the uninfected, the infected, or contacts between the uninfected and the infected.
- The behavior of individuals that leads to the two types of externalities.

This paper—a product of Public Service Delivery, Development Research Group—is part of a larger effort in the group to examine the public economics of health. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Hedy Sladovich, mail stop MC2-204, telephone 202-473-7698, fax 202-522-1154, email address hsladovich@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at gerso@worldnet.att.net or jhammer@worldbank.org. (42 pages)

2608. Financial Development and International Trade: Is There a Link?

Thorsten Beck
(May 2001)

Economies with better developed financial sectors have a comparative advantage in manufacturing industries. A two-sector model shows the sector with large scale economies profiting more than the other from a well-developed financial sector. In countries with higher levels of financial development, manufactured exports represent a higher share of GDP and of merchandise exports—and those countries have a higher trade balance in manufactured goods.

Beck explores a possible link between financial development and trade in manufactures. His theoretical model focuses on the role of financial intermediaries in facilitating large-scale, high-return projects. Results show that economies with better developed financial sectors have a comparative advantage in manufacturing industries.

He provides evidence for this hypothesis, first proposed by Kletzer and Bardhan (1987), using a 30-year panel of data for 65 countries. Controlling for country-specific effects and possible reverse causality, he shows that financial development exerts a large causal impact on the level of both exports and the trade balance of manufactured goods.

This paper—a product of Finance, Development Research Group—is part of a larger effort in the group to understand the link between financial development and economic growth. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Agnes Yaptenco, room MC3-446, telephone 202-473-8526, fax 202-522-1155, email address ayaptenco@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at tbeck @worldbank.org. (40 pages)

2609. Financial Dependence and International Trade

Thorsten Beck
(May 2001)

Does financial development translate into a comparative advantage in industries that use more external finance? Yes, it does.

Using industry-level data on firms' dependence on external finance—data for 36 industries and 56 countries—Beck shows that countries with better developed financial systems have higher export shares and trade balances in industries that use more external finance.

These results are robust to the use of alternative measures of external dependence and financial development and are not attributable to reverse causality or simultaneity bias.

This paper—a product of Finance, Development Research Group—is part of a larger effort in the group to understand the link between financial development and economic growth. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Agnes Yaptenco, room MC3-446, telephone 202-473-8526, fax 202-522-1155, email address ayaptenco@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at tbeck @worldbank.org. (31 pages)

2610. Crisis and Contagion in East Asia: Nine Lessons

Masahiro Kawai, Richard Newfarmer, and Sergio Schmukler
(June 2001)

Currency and banking crises such as those originating in Mexico (1994), Thailand (1997), and the Russian Federation (1998) tend to be associated and often take place together across countries. The East Asian experience was a fruitful laboratory for examining key questions. For example: How did contagion occur so extensively, and why was it so devastating? Did policy responses to crises and contagion minimize their impact on the real economy? What type of international financial architecture is needed to prevent and manage crises and contagion?

Kawai, Newfarmer, and Schmukler investigate the origins of the East Asian crisis and its contagion, examine the channels of contagion, and discuss policy recommendations. They make detailed recommendations in the context of nine general lessons learned from the East Asian crisis.

Preventing crises and contagion

- Avoid large current account deficits financed through short-term private capital inflows.
- Aggressively regulate and supervise financial systems to ensure that banks and nonbank financial institutions manage risks prudently.
- Put in place incentives for sound corporate finance to prevent high leverage ratios and overreliance on foreign borrowing.

Managing crises and contagion

- In the context of sound policies, mobilize timely external liquidity of sufficient magnitude to restore market confidence.
- At times of crisis, "bail in" private foreign creditors. When official resources are too limited for the magnitude of the crisis or contagion, and when private creditors are not amenable to coordination, some involuntary private involvement may be needed too.
- Keep in mind that there is no one-size-fits-all monetary and fiscal stance for responding to crises and contagion.

Resolving the systemic consequences of crises and contagion

- Move swiftly to establish domestic and international mechanisms for dealing with the assets and liabilities of nonviable banks and corporations.
- Cushion the effects of crisis on low-income groups through social policies to ameliorate the inevitable social tensions associated with adjustment.

Developing an effective regional financial architecture

- Improve mechanisms for preventing, managing, and resolving crises and contagion at the regional level in ways consistent with improvements in the global financial architecture.

An earlier version of this paper—a joint product of the Office of the Regional Vice President, East Asia and Pacific Region, and Macroeconomics and Growth, Development Research Group—was presented at the seminar on ASEAN Macroeconomic Outlook and Economic Recovery, organized by the ASEAN Secretariat and held in Manila in February 1999. Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Emily Khine, room MC3-347, telephone 202-473-7471, fax 202-522-3518, email address kkhine @worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at mkawai@worldbank. org, rnewfarmer@worldbank.org, or sschmukler@worldbank.org. (54 pages)

2611. Trade and Production Fragmentation: Central European Economies in European Union Networks of Production and Marketing

Bartlomiej Kaminski and Francis Ng
(June 2001)

The unprecedented globalization of the production process—dividing up the value chain—has brought the integration of trade and the disintegration of production, with deep implications for the international division of labor. Have Central European economies been able to readjust their production structures to international markets? Three of them—Estonia, Hungary, and Slovakia—have done especially well.

Developments driven by trade liberalization and technological progress mean that old development strategies, based on state intervention and trade protection, no longer work. Global competition has brought a growing emphasis on product standards, rapid innovation, adaptability, and speedy response. Technology has made possible the fragmentation of production.

Firms that become part of global production and distribution networks do not have to be foreign-owned, as many multinationals contract out the delivery of services or products. Foreign involvement facilitates the transfer of managerial and technological know-how, so firms benefit from becoming part of a network. Small producers, rather than servicing small local markets, can supply large firms abroad.

Foreign participation—through outsourcing or direct investment—may offer direct access to a parent company's global networks. Becoming part of a multinational's production and distribution network is a cheap way to market products. But the unprecedented globalization of the production process has brought the integration of trade and the disintegration of production, with deep implications for the international division of labor.

Have Central European economies been able to take advantage of the global fragmentation and disintegration of production and the division of labor?

Ten countries—Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia—have made large strides toward readjusting their production structures to international markets, mainly in the European Union. And trade in industrial products has lost its pre-transition idiosyncratic character. All 10 economies appear to be on the same track as the European Union in changing patterns of trade with the networks Kaminski and Ng discuss.

Progress is advanced in furniture (most of the 10 economies) and automobiles (the Czech Republic, Hungary, Poland, Slovakia, and Slovenia) and is gaining momentum in "information revolution" networks (Estonia and Hungary).

Progress in industrial integration with the European Union has been uneven. The first-tier economies (the Czech Republic, Estonia, Hungary, Poland, Slovakia, and Slovenia) are highly integrated in their trade in manufactures. The lower-tier economies (Bulgaria, Latvia, Lithuania, and Romania) are much less so and, despite relatively low wages, have no comparative advantage in assembly in EU markets.

Among first-tier economies, three stand out: Estonia and Hungary (in integration into "information revolution" markets) and Slovakia (in restructuring its automotive sector).

This paper—a product of Trade, Development Research Group—is part of a larger effort in the group to study regional integration. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, email address ltabada@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at bkaminski@worldbank.org or fng@worldbank.org. (61 pages)

2612. Contractual Savings, Capital Markets, and Firms' Financing Choices

Gregorio Impavido, Alberto R. Musalem, and Thierry Tressel
(June 2001)

Contractual savings institutions, such as pension funds and life insurance companies, have a comparative advantage in supplying long-term finance to firms. In market-based economies, an increase in the proportion of shares in the contractual savings portfolio leads to a decline in firms' leverage. In bank-based economies, in contrast, it is associated with an increase in firms' leverage and debt maturity.

Impavido, Musalem, and Tressel analyze the relationship between the development and asset allocation of contractual savings institutions (such as pension funds and life insurance companies) and firms' financing patterns.

Contractual savings institutions have a comparative advantage in supplying long-term finance to firms. In market-based economies, an increase in the proportion of shares in the contractual savings portfolio leads to a decline in firms' leverage. In bank-based economies, in contrast, it is associated with an increase in firms' leverage and debt maturity.

Impavido, Musalem, and Tressel develop a simple model of firms' leverage and debt maturity decisions. They illustrate the mechanisms through which the development of contractual savings institutions may affect corporate financing patterns.

Empirically, they show that the development and asset allocation of contractual savings institutions have an independent impact on firms' financing choices, after controlling for firms' characteristics, for macroeconomic variables, and for traditional measures of financial development. The development of contractual savings institutions leads to an efficiency gain at the firm level insofar as it increases the array of firms' external financing possibilities. Moreover, increasing the maturity of debt or decreasing leverage should increase firms' resilience in the face of various shocks (and therefore decrease the refinancing and bankruptcy risks).

The impact on firms' financing patterns works through several channels. In market-based economies, the effect seems to work through the stock market and equity finance. In bank-based economies, it seems to work through the loan supply. More analysis is needed to identify the channels through which contractual savings institutions interact with the financial system.

Regulations aimed at strengthening corporate governance are more likely to have a strong impact in market-based economies. In bank-based economies, the emphasis should be on the interaction with the banking sector.

This paper—a product of the Financial Sector Development Department—is part of a larger effort in the department to study the effects of contractual savings on financial markets. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Patricia Braxton, mail stop MC9-904, telephone 202-473-2720, fax 202-522-7105, email address pbraxton @worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at gimpavido @worldbank.org, amusalem@worldbank.org, or tressel@delta.ens.fr. 61 pages.

2613. Foreign Direct Investment and Poverty Reduction

Michael Klein, Carl Aaron, and Bita Hadjimichael
(June 2001)

In the 1990s, foreign direct investment began to swamp all other cross-border capital flows into developing countries. Does foreign direct investment support sound development? In particular, does it contribute to poverty reduction?

Foreign direct investment is a key ingredient of successful economic growth and development in developing countries—partly because the very essence of economic development is the rapid and efficient transfer and cross-border adoption of "best practices." Foreign direct investment is especially well suited to effecting this transfer and translating it into broad-based growth, not least by upgrading human capital.

Growth is the single most important factor in poverty reduction, so foreign direct investment is also central to achieving that important World Bank goal. Government-led programs that improve social safety nets and explicitly redistribute assets and income might direct more of the fruits of growth to the poor. But these are complements—not alternatives—to sensible growth-oriented policies. And growth is needed to fund these government-led programs.

Moreover, the delivery of social services to the poor—from insurance schemes to such basic services as water and energy—can clearly benefit from reliance on foreign investors.

In short, foreign direct investment remains one of the most effective tools in the fight against poverty.

This paper—a product of the Private Sector Advisory Services Department—is part of a larger effort in the department to analyze the role of private sector development in poverty reduction. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Zai Fanai, room I9-121, telephone 202-473-3605, fax 202-522-3262, email address zfanai@ifc.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at mklein @worldbank.org, caaron@ifc.org, or bhadjimichael@worldbank.org. (41 pages)

2614. South-South Regional Integration and Industrial Growth: The Case of the Andean Pact

Dorsati H. Madani
(June 2001)

Results from this study of three Andean countries cast doubt on the argument that countries may benefit from regional integration arrangements because of industry and cross-industry effects of scale. Unilateral liberalization might have a more positive impact on output growth, through the channel of greater imports of intermediate inputs.

Has the revival of the Andean Pact affected the industrial growth of Bolivia, Colombia, and Ecuador? Has this regional agreement had greater effects than unilateral liberalization?

Madani explores two potential channels for industrial growth: scale effects and variety of imported intermediate inputs.

She analyzes data from 22 industries (classified at the three-digit level of ISIC) across three countries. The results show that:

- The variety of intermediate inputs originating from nonregional partners has a significant positive impact on growth in a handful of industries.
- The effect of regional variety is at best mixed. This lends preliminary support to the argument that unilateral liberalization will have a positive impact on output growth through the channel of imported intermediate inputs.

There is significant heterogeneity in industry-level returns to scale. Moreover, in the three Andean countries studied, cross-industry scale effects were small and negative. Therefore, the three countries should not expect large or across-the-board gains through scale effects from their regional arrangement.

This paper—a product of Trade, Development Research Group—is part of a larger effort in the group to understand the effects of regional integration. The study was funded by the Bank's Research Support Budget under the research project "The Impact of the Revival of the Andean Pact and the ASEAN Group on Their Member Countries' Industrial Growth." Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Robert Simms, room MC3-322, telephone 202-473-7156, fax 202-522-1159, email address rsimms@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at dmadani@worldbank.org. (52 pages)

2615. Trade, Growth, and Poverty

David Dollar and Aart Kraay
(June 2001)

The evidence from individual cases and from cross-country analysis supports the view that globalization leads to faster growth and poverty reduction in poor countries.

To determine the effect of globalization on growth, poverty, and inequality, Dollar and Kraay first identify a group of developing countries that are participating more in globalization. China, India, and several other large countries are part of this group, so well over half the population of the developing world lives in these globalizing economies.

Over the past 20 years, the post–1980 globalizers have seen large increases in trade and significant declines in tariffs. Their growth rates accelerated between the 1970s and the 1980s and again between the 1980s and the 1990s, even as growth in the rich countries and the rest of the developing world slowed. The post–1980 globalizers are catching up to the rich countries, but the rest of the developing world (the non-globalizers) is falling further behind.

Next, Dollar and Kraay ask how general these patterns are, using regressions that exploit within-country variations in trade and growth. After controlling for changes in other policies and addressing endogeneity with internal instruments, they find that trade has a strong positive effect on growth.

Finally, the authors examine the effects of trade on the poor. They find little systematic evidence of a relationship between changes in trade volumes (or any other measure of globalization they consider) and changes in the income share of the poorest—or between changes in trade volumes and changes in household income inequality. They conclude, therefore, that the increase in growth rates that accompanies expanded trade translates on average into proportionate increases in incomes of the poor. Absolute poverty in the globalizing developing economies has fallen sharply in the past 20 years. The evidence from individual cases and from cross-country analysis supports the view that globalization leads to faster growth and poverty reduction in poor countries.

This paper—a product of Macroeconomics and Growth, Development Research Group—is part of a larger effort in the department to study the effects of globalization on the poor. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Emily Khine, room MC3-347, telephone 202-473-7471, fax 202-522-3518, email address ekhine@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at ddollar@worldbank.org or akraay@worldbank.org. \(45 pages)

2616. Reforming Land and Real Estate Markets

Ahmed Galal and Omar Razzaz
(June 2001)

Some World Bank-supported efforts at land and real estate reform have too narrow a technical focus, at the expense of institutional reform. Some emphasize one set of reforms (such as mortgage finance) while ignoring others essential to those reforms (such as clear property rights and land registration). Some emphasize one sector (such as urban land) while ignoring its interaction with another (rural land conversion). To be successful, reforms need to be comprehensive in design, even if implementation is phased over time.

Land and real estate reforms have not been effective at achieving their objectives, in part because of how they have been designed and implemented. To be successful, reforms must become comprehensive in design, argue Galal and Razzaz, although implementation may be phased over time and take local conditions into account. Reform must include three elements:

- Institutional reforms that better define property rights, reduce information asymmetry, and improve contract enforcement.
- Capital market reforms that make mortgage finance available at reasonable rates, especially for the poor.
- Market reforms that reduce or eliminate the main distortions in the prices of goods and services produced by land and real estate assets.

In their review of land and real estate reforms supported by the World Bank, Galal and Razzaz find that such reforms receive less attention at the conceptual stage than they should, considering their great impact on poverty, growth, and stability. They base their conclusion on the limited coverage of land and real estate issues in country assistance strategies, the main vehicle for identifying priority areas for reform.

Most Bank-supported projects do not address all three elements critical for reform. And most provide no justification for excluding them, and no plan for follow-up.

The Bank's Operations Evaluation Department rates Bank-supported land and real estate projects relatively well on outcome and sustainability but not on institutional development. But *land and real estate reform is institutional by nature.*

Galal and Razzaz urge the Bank and policymakers to change course. After a comprehensive assessment of the status of real estate institutions and markets, all actors in this sector should be pulled together to develop a comprehensive approach to land and real estate reform.

This paper—a product of the Private Provision of Public Services Group, Private Sector Advisory Services—is part of a larger effort in the department to examine the role of real assets in private sector development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Dominique Dietrich, room H8-276, telephone 202-473-4995, fax 202-477-1993, email address ddietrich@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Omar Razzaz may be contacted at orazzaz@worldbank.org. (39 pages)

2617. Shanghai Rising in a Globalizing World

Shahid Yusuf and Weiping Wu
(June 2001)

If the Chinese economy can sustain its growth rate, it will rival the United States in a few decades. And if Shanghai can sustain its preeminence in China, it is the East Asian city most likely to become a global center on a par with New York, London, and Tokyo—if China can become open and competitive and if Shanghai can greatly improve in terms of industry, housing, infrastructure, and quality of life, among other things.

In a globalizing world, cities at or near the apex of the international urban hierarchy are among the favored few—New York, London, and Tokyo—that have acquired large economic, cultural, and symbolic roles. Among a handful of regions that aspire to such a role—such as Hong Kong, Miami, and São Paulo—Shanghai has reasonable long-term prospects.

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Yusuf and Wu explore the makings of a world city, identify ingredients essential for that status, indicate national and municipal policies that may set Shanghai on the path to being a global city, and show how such policies are being implemented.

As urbanization continues, the authors say, and as information technology and finance related service activities take on even more importance, the number of regional and global centers could increase, but only if they satisfy some exacting requirements. Shanghai's chances, for example, depend on the extent to which China opens up and on a host of municipal policies—policies that emphasize Shanghai's industrial strength, substantially enlarge its base of information technology and producer services, ensure an adequate supply of skills, expand available housing and infrastructure enough to meet demand, and improve the quality of life.

This paper is a product of the Development Research Group. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Shahid Yusuf, room MC3-511, telephone 202-458-2339, fax 202-522-1150, email address syusuf @worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. (40 pages)

2618. Globalization and the Challenge for Developing Countries

Shahid Yusuf
(June 2001)

Globalization is not a panacea. It can increase many countries' susceptibility to shocks and can subject states to checks and disciplines that circumscribe sovereignty. But reversing globalization, were it possible, would be an enormous setback. And embracing globalization piecemeal, while keeping a plethora of regulations in place, would be highly inefficient.

Research on the sources of growth shows several factors to be relevant to all countries, rich or poor. Whether developing countries can substantially raise per capita incomes depends on policies that address these variables: labor, human capital, capital investment in research and development, technological progress, and the increase in total factor productivity arising from scale economies, the effects of agglomeration, externalities, and institutions that secure rights and minimize transaction costs.

Yusuf argues that a comprehensive approach to globalization, managed and abetted by good policies, can magnify the effects of growth-promoting measures. Among his observations:

- Returns from investment in skills are much greater in a more technologically advanced and integrated economy.
- Trade, by enlarging markets, reinforces those gains, and the option to migrate further augments the value of skills. The growing worldwide gap in income between skilled and unskilled workers suggests how much more fruitful skills are under globalization.
- A 50 percent increase (or even a doubling) in growth rates demands a vast amount of capital, embodying modern technology and the knowledge needed to put it to its best use. The international economy can be a source of such capital.
- Openness, combined with spatially neutral domestic policies and the scaling back of regulatory constraints on domestic business activities, can unleash the full force of agglomeration economies and networking externalities, allowing industrial clusters to emerge in metropolitan regions.
- Openness is also the best way for low-income countries to tap into technologies that will galvanize agriculture (low-income countries' economic center) and manufacturing activities and nourish indigenous technological advance.
- No research convincingly makes the case for delaying openness or for sequencing the various elements of openness. A good case can be made for embracing all the key elements of globalization at the same time—while sequencing (where needed) the pace of integration in such areas as trade and finance.

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